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## INTRODUCTION

**Missed last week's Kindle Fire HD 7" teardown? [\[invalid guide link\]](#).**

Take a look, it's in a book—an eBook that is—the Teardown Rainbow! We're moving on over to the next tablet in Amazon's new Kindle line-up; get ready for some mad knowledge.

Hankering for more tasty tidbits? Find some bite-sized trivia on our [Twitter](#), have a hearty meal on our [Instagram](#), or forge a knowledge partnership via [Facebook](#).

[video: <http://youtu.be/Kdh6rnqIAy0>]

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### TOOLS:

- [iFixit Opening Tools](#) (1)
  - [Spudger](#) (1)
  - [T3 Torx Screwdriver](#) (1)
  - [T4 Torx Screwdriver](#) (1)
  - [iFixit Opening Picks set of 6](#) (1)
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## Step 1 — Kindle Fire HDX 7" Teardown



- In the game of tablets, you either win, or you put out a bunch of different versions and hope one catches on. Seriously, it's the War of the Five Kings out there. Here are the specs for the latest aspirant:
  - 7" display with 1920 x 1200 resolution at 323 ppi
  - Quad-core 2.2 GHz Snapdragon processor
  - Dual band, dual antenna (MIMO) Wi-Fi
  - Dual stereo speakers with Dolby Audio and built-in microphone
  - Front-facing HD camera
  - 16/32/64 GB internal storage

## Step 2



- A quick inspection of the back reveals dual microphones and speaker grilles up top, with the buttons at thumb level.
- ⓘ The buttons seem a lot more robust and conveniently located than last year's Fire HD.
- How do you know you've got the right device? Check the model number: C9R6QM.

## Step 3



- The rear case turns out to be *the* case, wrapping around the entire device and forming a near-unibody enclosure. We target a thin plastic bezel as the Kindle's [one weakness](#).
- Our little blue friend is the perfect ~~ore~~ tool to get us inside. But it's no easy task prying against all that adhesive.
  - ① Fixit doctors prescribe a dose of toasty [iOpener](#).
- And—ooh! Fuschia...fuchsia...[pink](#) screws.
  - ① It's always nice to have a reminder to [think pink](#).

## Step 4



- While it's significantly harder than cracking open a book, we crack into our Kindle like a kid who loves [lobster](#).
- With the rear case free, we rush to get inside, only to be stopped by a pesky cable tethering the two halves.
- No cable will keep us out. Having dispensed with the nitty, we get to the gritty: components!
  - ❗ In the [Kindle Fire HD of yesteryear](#), the rear case was a bare piece of plastic, without any additional components.
- This time around, all of the peripherals have been offloaded to the rear case, along with a shiny heat dissipating plate.

## Step 5



- With a bit of spudger-fu, we knock out the combination power button and micro-USB port cable.
- ❗ The micro-HDMI port from last year's model has been torched in favor of wireless mirroring via [Miracast](#) and the [Second Screen](#) sharing technology, coming sometime in October.
- We're happy to see modularity in the smaller components of the HDX. The volume buttons, microphones, and headphone jack are all separate pieces, allowing failed components to be replaced individually.

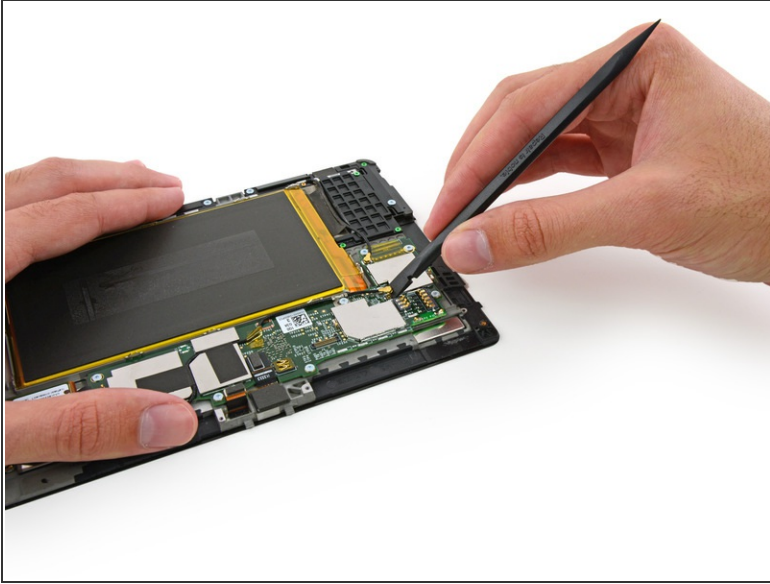
## Step 6




- Say what? Speakers for the HDX are provided by Dolby. While these speakers may look small, they are [reported](#) to pump out 77 decibels.
- ❗ For reference, that puts these speakers [somewhere between normal conversation and a lawnmower](#).



## Step 7



- Antenna adventures! Where is this cable going?
  - *Nowhere.* It is connected, screwed, and taped *three times* in place. It must have been an unruly child.
-  This seems a little like restraining a [teddy bear with a muzzle](#).

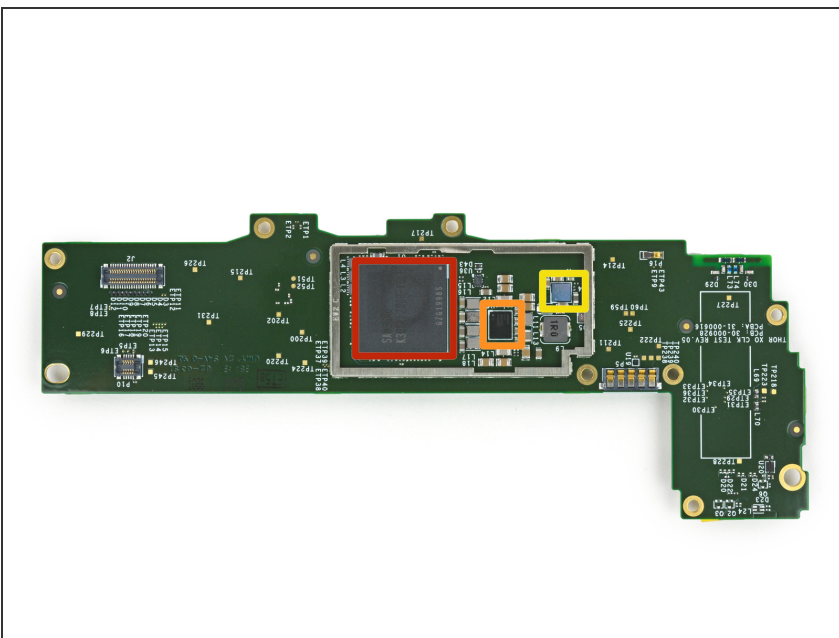


## Step 8



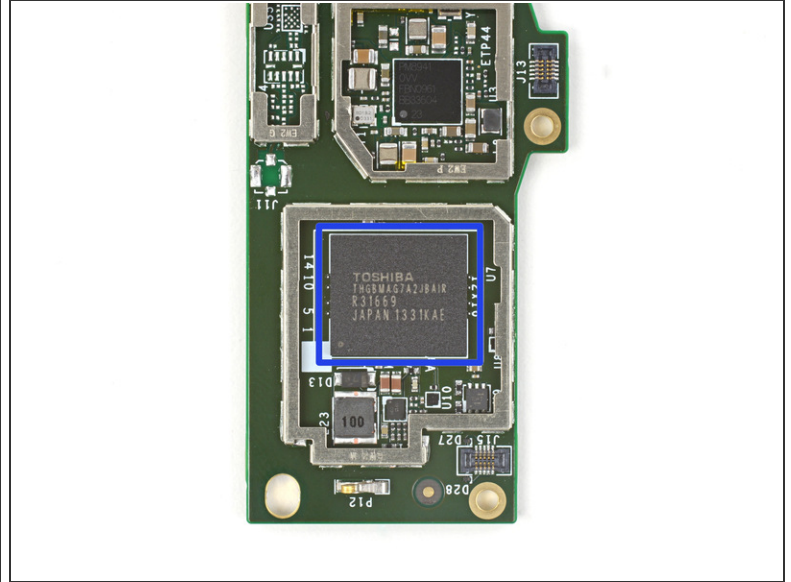
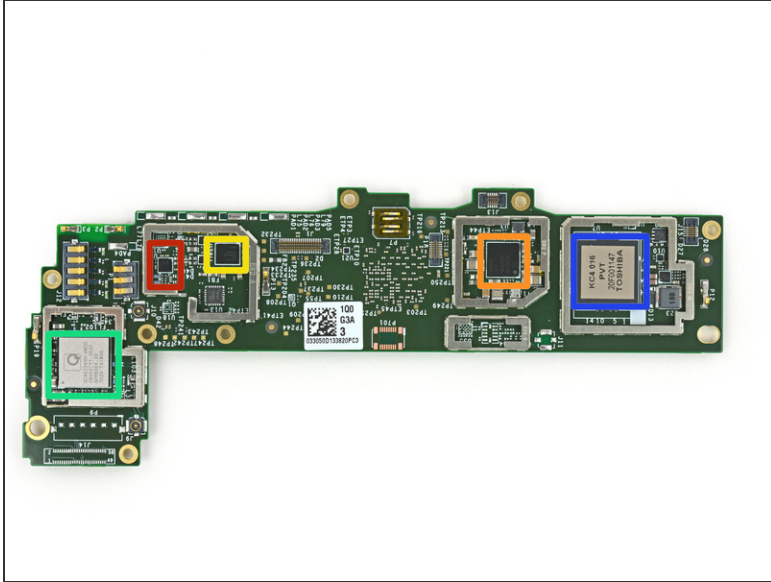
- The motherboard is out of the nest, but can it ever return home?
- The LCD and digitizer cables are trapped between the LCD and midframe. The only way to get the connectors reseated (aside from [blind luck](#)) is to remove the midframe from the display assembly.
- To make matters worse, the battery connects via spring contacts *beneath* the motherboard—so a battery replacement makes for an even more involved repair procedure.
- ❗ What was that? The sound of the HDX's repairability score free-falling into the abyss.

## Step 9



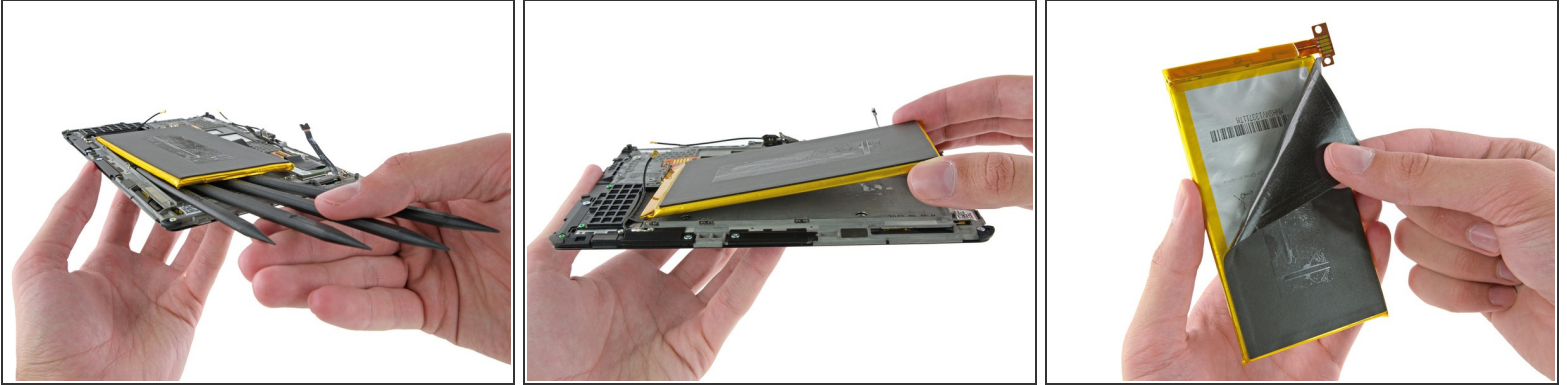
- The back side of the motherboard is home to a few ICs:
  - Samsung [K3QF2F200B](#) 16 Gb (2 GB) LPDDR3 SDRAM (we believe the Snapdragon 800 SoC is layered underneath)
  - Qualcomm [PM8841](#) Power Management IC
  - Summit Microelectronics (owned by Qualcomm) [SMB349](#) Programmable Single-Cell Lithium-Ion/Lithium-Polymer Battery Charger


## Step 10



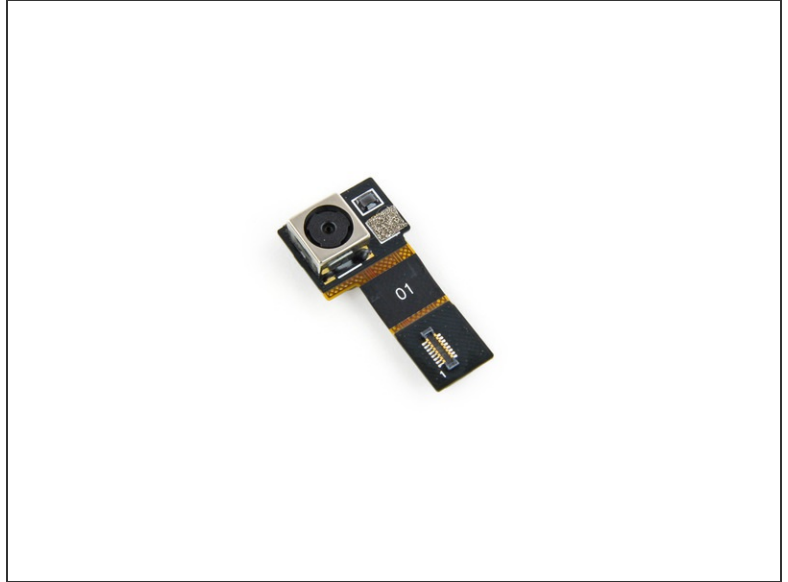
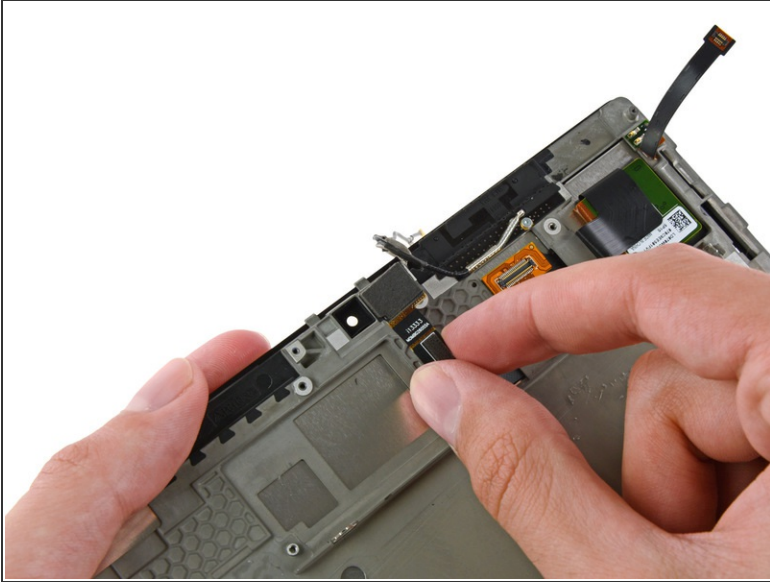
- The front side of the motherboard contains more ICs:
  - Maxim Integrated [MAX97236](#) Audio Amplifier with Jack Detection
  - Qualcomm [PM8941](#) Power Management IC
  - Qualcomm [WCD9320](#) Audio Codec
  - Qualcomm Atheros [QCA6234XH](#) Integrated Dual-Band 2x2 802.11n +Bluetooth 4.0
  - Toshiba KC4 016 PVT 20F001147
    - ⓘ Upon further inspection we discovered this IC to be the Toshiba THGBMAG7A2JBAIR 128 Gb (16 GB) e-MMC NAND Flash

## Step 11



- Using all the force of our ~~adamantium claws~~ nylon spudgers, we manage to free the 3.8 V, 4550 mAh battery from its adhesive.
- For a device called the "Fire," we're having to bring a lot of our own heat: some mighty powerful adhesive holds the battery to the plastic midframe.  
 Plastic as in *not very sturdy*—we were worried we might just snap the front glass or LCD right in half. It's a good thing we didn't—it's a bit too late to use the ["Mayday" button](#).
- ① We're hoping that device manufacturers won't *stick* to the adhesive trend. We believe that even the [worst offenders](#) have a chance for redemption.

## Step 12



- A big up-sell from the 7" Kindle Fire HD, the HDX features a front-facing camera for selfies and Skyping.
- If you're judging a Kindle by its cameras, here are the options for the Fall 2013 lineup:
  - **Kindle Fire HD 7"**: no camera
  - **Kindle Fire HDX 7"**: 720p front-facing camera
  - **Kindle Fire HD 8.9"**: 720p front-facing camera
  - **Kindle Fire HDX 8.9"**: 720p front-facing camera *and* 8 MP rear-facing camera

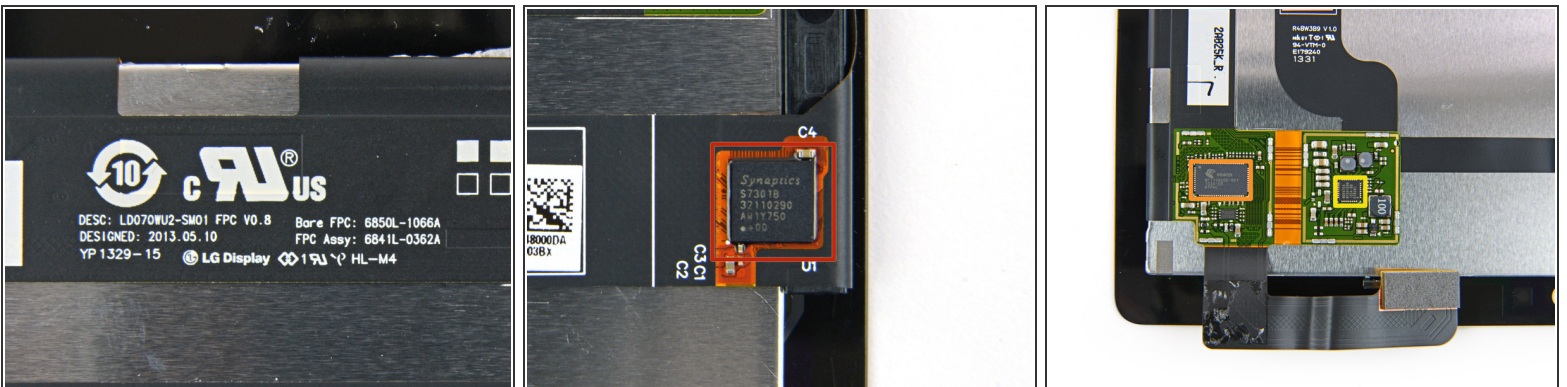


## Step 13



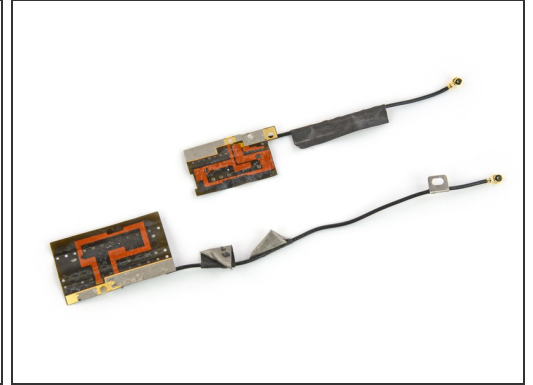
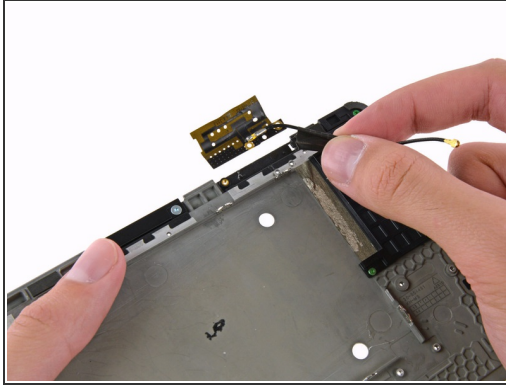
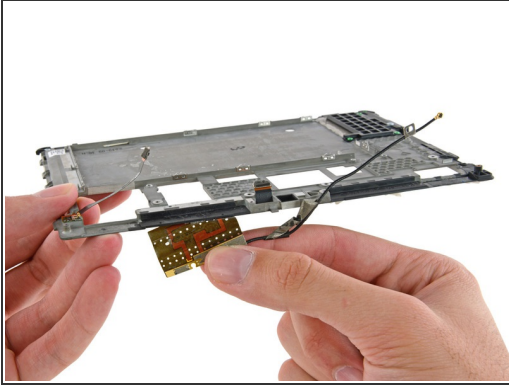
- ⓘ Time to peel away another layer to test our midframe theory: Can we replace the motherboard with the midframe removed?
- A little heat from an iOpener softens the adhesive around the bezel and makes sliding an opening pick around the edge a chore, as opposed to an outright nightmare.
- ⓘ This adhesive feels rubbery and balls up under the pick, making it pretty easy to remove the midframe. However, it will be difficult to replace; you'll need all new adhesive to get everything back together.

## Step 14



- The fancy new HDX display is revealed: It's the not-so-fancily named LG LD070WU2-SM01.
- More ICs located on the back of the display assembly:
  - Synaptics S7301B Touchscreen Controller.
  - Novatek NT71392QG
  - Novatek NT50169B

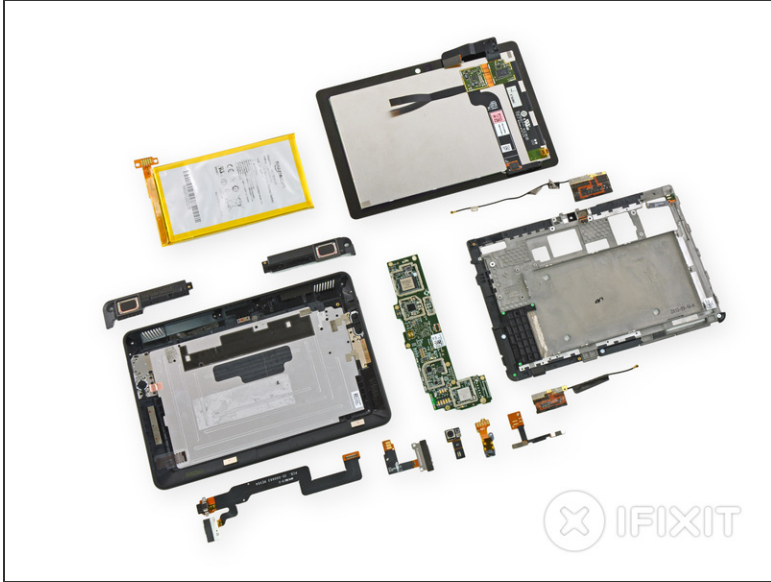
## Step 15



- We suspect Amazon was feeling a little insecure when they built the HDX. Like everything else, the antenna cables are seemingly over-secured.
- These antenna cables are taped in multiple places, screwed down, and wrapped around the midframe—just in case.
- After a [vicious struggle](#), these suckers are finally free.



## Step 16



## REPAIRABILITY SCORE:



- Kindle Fire HDX 7" Repairability: **3 out of 10** (10 is easiest to repair)
- Several modular components can be replaced individually.
- The rear case is secured with screws and clips, so it can be removed (albeit with difficulty) without heat.
- The battery is glued in place with strong adhesive and requires motherboard removal to replace.
- The motherboard is very difficult to replace—the midframe must be separated from the display assembly in order to reinstall it.
- The LCD is fused to the front glass, so you'll need to replace both components in the event of a cracked screen.

To reassemble your device, follow these instructions in reverse order.

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